

Two new species and a newly recorded species in the genus *Agrilus* Curtis (Coleoptera: Buprestidae) from China

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Abstract: Two new species, *Agrilus longicarinus* **sp. nov.** (from Guangdong) and *A. lini* **sp. nov.** (from Hainan) belonging to the *A. japanocarinatus* species-group, are described and illustrated. A key to separate species of this species-group from China is provided. And the species *A. arsenevi* Jendek, 2009 (from Ningxia) is recorded for the first time in China. In addition, new faunal records for six Chinese species in the genus *Agrilus* are presented.

Key words: Agriinae; taxonomy; distribution

中国窄吉丁属二新种及一新记录种记述（鞘翅目：吉丁科）

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摘要：记述脊脊窄吉丁种团 *Agrilus japanocarinatus* species-group 2 新种：长脊窄吉丁 *Agrilus longicarinus* **sp. nov.** (广东) 和林氏窄吉丁 *A. lini* **sp. nov.** (海南)。首次记录了中国的阿氏窄吉丁 *A. arsenevi* Jendek, 2009。编制了该种团的中国种检索表，记录了 6 种中国窄吉丁的新分布地。

关键词：窄吉丁亚科；分类；分布

Introduction

Agrilus Curtis, 1825 is the most speciose genus in the family Buprestidae (Bellamy 2008). Species of *Agrilus* are both diverse and very abundant in China. Until now, 252 species of the genus *Agrilus* have been described and recorded from China (Jendek 2006, 2016; Jendek & Grebennikov 2011). Jendek & Grebennikov (2011) proposed the *A. japanocarinatus* species-group and described two new species. *Agrilus* species in the *A. japanocarinatus* species-group are recognized by the combined possession of the following traits (Jendek & Grebennikov 2011): (1) body small or medium, cuneiform or fusiform; (2) pronotum with arcuate or bisinuate carinal prehumeral, junction of marginal and submarginal carinae presented; (3) elytra with distinct humeral carina; (4) metasternal projection impressed or pitted; and (5) apical margin of the last ventrite and pygidium arcuate.

After our study of the *Agrilus* specimens from China, two new species and a newly recorded species in the genus *Agrilus* from China are recognized: *A. longicarinus* **sp. nov.**

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(from Guangdong), *A. lini* **sp. nov.** (from Hainan), and *A. arsenevi* Jendek, 2009 (from Ningxia). These two new species belong to the *A. japanocarinatus* species-group. In addition, new provincial records for six Chinese *Agrilus* species are presented in this study.

Material and methods

The examined specimens are deposited in the College of Life Sciences, China West Normal University, Nanchong, China (CWNNU), Yangtze University (YTU), and the Museum of Hebei University (HBUM). Specimens were illustrated, photographed and measured using a Leica M205 FA stereomicroscope equipped with a Leica MC190 HD camera. Images were edited using Adobe Photoshop CC2018. Morphological terminology follows Jendek & Grebennikov (2011).

Taxonomy

A key to species of the *Agrilus japanocarinatus* species-group from China

1. Elytral apex subangular, outside with a very small spine *A. lini* **sp. nov.**
 -. Elytral apex round or subtruncate, outside without small spines 2
2. Anterior part of pronotum distinctly wider than posterior part *A. longicarinus* **sp. nov.**
 -. Anterior part of pronotum narrower than posterior part 3
3. Elytra bicolored, prehumeral obsolete or filamentary, extending to third of pronotal length *A. bocaki*
 -. Elytra unicolored, prehumeral carinal, extending beyond half of pronotal length *A. lei*

1. *Agrilus longicarinus* **sp. nov.** (Fig. 1)

Description. Body length 3.2–5.1 mm (Holotype 3.8 mm). Body (Figs 1A, 1B) subparallel. Build robust. Color (dorsally) bicolored, body black, frons and base of pronotum green, base of elytra with green luster. Head (Fig. 1C) medial impression present. Impression (extent) vertex and frons. Impression (depth) shallow. Epistoma with raised upper margin, surface with short pubescence. Frons surface anterior with denser pubescence than posterior. Shape moderately convex. Outline not protruding from head outline. Vertex surface with sparser and shorter pubescence. Outline not protruding from head outline. Sculpture on vertex punctures. Sculpture irregular, sparse and superficial. Eye size moderate. Shape not protruding from head outline. Lower margin below antennal socket. Antennae length moderate. Sexual modification in male not apparent. Pronotum (Fig. 1C) shape visually elongated. Sides arcuate. Maximal width at anterior. Anterior margin wider than posterior. Anterior lobe moderate. Shape arcuate. Position to anterior angles at level with anterior pronotal angles or projecting beyond anterior pronotal angles. Posterior angles obtuse. Apex sharp. Disk convexity strongly convex. Disk impressions posterior and lateral. Prehumeral carinal. Shape arcuate. Extends beyond half of pronotal length. Posterior end joining posterior pronotal angle. Anterior end close to pronotal marginal carina. Arc moderate. Marginal and submarginal carinae interspace narrow. Strongly convergent. Junction present. Narrowest point at posterior third of pronotal length. Scutellum size moderate. Disk not impressed. Scutellar carina present. Elytra unicolored. Humeral carina present. Apices arrangement conjoint. Shape arcuate or subtruncate. Truncation transverse. Elytral pubescence entire. Unicolored. Character

homogenous. Tomentum present. Prosternal lobe moderate. Anterior margin arcuate. Emargination absent. Prosternal process (Fig. 1D) shape subparallel. Sides straight. Angles obtuse. Angles (tips) blunt. Disk flat. Abdomen apical margin of pygidium arcuate. Apical margin of last ventrite arcuate. Sternal groove shape on apex of last ventrite (Fig. 1E) arcuate. Metatarsus longer than mesotarsus. Metatarsomere 1 (relative size) subequal to 2–4 combined. Aedeagus (Fig. 1F) symmetric. Aedeagus (shape) widest before apical part. Apex of median lobe sharp.

Female. Body larger than that of male, frons black.

Species group. *A. japanocarinatus* species-group.

Holotype. ♂, **China**, Guangdong, Nanling, 16-VIII-2014, Haoyu LIU leg., HBUM;
Paratypes. 3♂5♀, same data as holotype, HBUM.

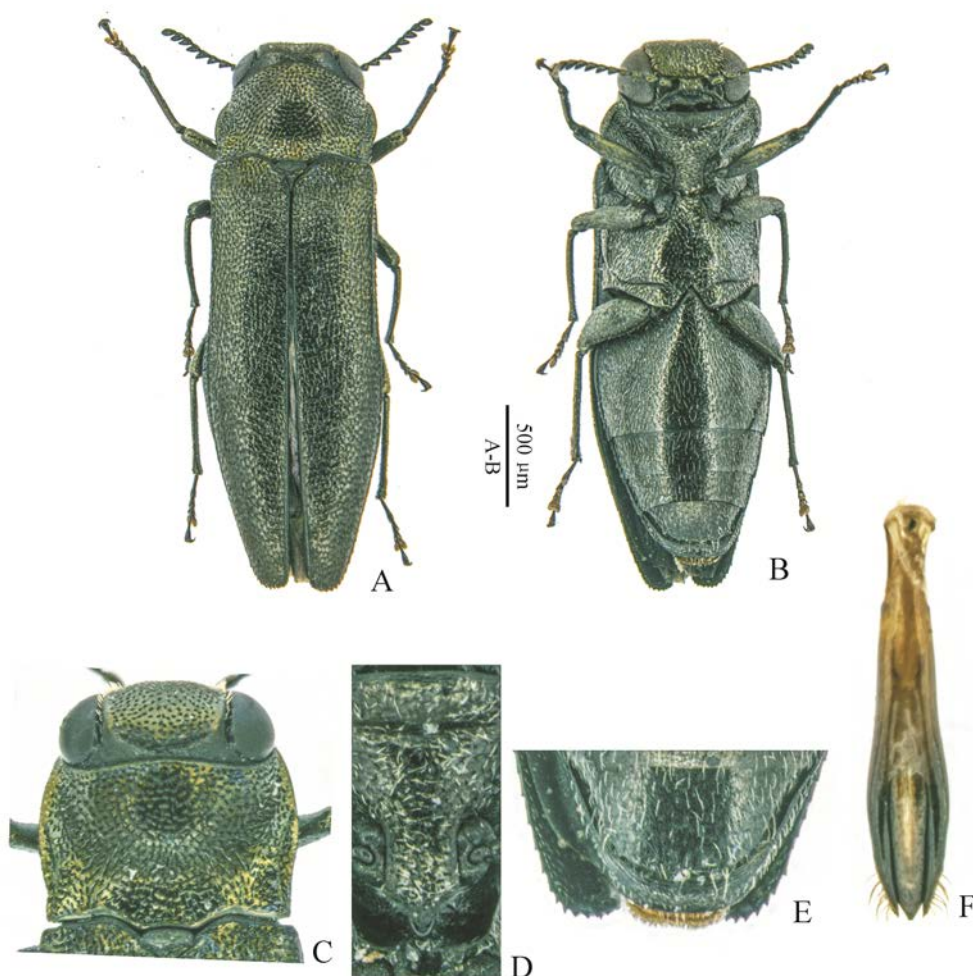


Figure 1. Morphology of *Agrilus longicarinus* sp. nov. A. Habitus, dorsal view; B. Habitus, ventral view; C. Head and pronotum, dorsal view; D. Prosternal process; E. Ventrite IV; F. Aedeagus.

Etymology. The specific epithet 'longicarinus' is composed of latin words 'long-' and 'carin-' which refer to the long humeral carina of the elytra.

Diagnosis. *A. longicarinus* **sp. nov.** is similar to *A. lei* Jendek, 2011, but differs from the latter in the following characters: (1) anterior margin of pronotum distinctly wider than posterior margin; (2) frons and pronotal base of male green; (3) posterior end of prehumeral carina joining posterior pronotal angle; and (4) lateral sides of pronotum distinctly arcuate.

2. *Agrilus lini* **sp. nov.** (Fig. 2)

Description. Body length 3.1 mm. Body (Figs 2A, 2B) subparallel. Build robust. Color (dorsally) black with luster. Head (Fig. 2C) medial impression present. Impression (extent) on vertex and frons. Impression (depth) shallow. Epistoma without raised upper margin. Surface with short and light brown pubescence. Frons anterior with light brown pubescence and arcuate wrinkles, middle with black pubescence. Moderately convex. Outline protruding from head outline. Vertex surface with black pubescence. Outline not protruding from head outline. Sculpture on vertex with irregular punctures; punctures irregular, sparse. Sculpture superficial. Eye size markedly convex; protruding from head outline. Lower margin below antennal socket. Antennae length moderate, sexual modification in male unknown. Pronotum (Fig. 2C) shape visually elongate. Sides arcuate. Maximal width at middle. Anterior margin slightly narrower than posterior. Anterior lobe obvious. Shape arcuate. Anterior angles slightly projecting beyond anterior pronotal angles. Posterior angles obtuse. Apex sharp. Disk strongly convex. Disk impressions posterior and lateral. Prehumerus carinal. Shape arcuate and extends beyond half of pronotal length. Posterior end joining posterior pronotal angle. Anterior end close to pronotal marginal carina. Arc moderate. Marginal and submarginal carinae interspace narrow. Strongly convergent. Junction present. Narrowest point at posterior third of pronotal length. Scutellum size moderate. Disk not impressed. Scutellar carina present. Elytra (Fig. 2D) unicolored. Humeral carina present. Apices arrangement conjoint. Shape subtruncate; truncation inclined. Elytral pubescence entire, bicolored, most of pubescence light brown, some black pubescence behind middle forming black spots. Character homogenous. Tomentum present. Prosternal lobe moderate. Anterior margin arcuate. Emargination absent. Prosternal process (Fig. 2E) subparallel. Sides straight. Angles arcuate; angle tips blunt. Disk flat. Posterior part impressed. Abdomen apical margin of pygidium arcuate. Apical margin of last ventrite arcuate. Sternal groove shape on apex of last ventrite (Fig. 2F) shallowly arcuately sinuate. Metatarsus longer than mesotarsus. Tarsomere 1 subequal to 2–4 combined. Ovipositor (Fig. 2G) long and broad.

Species group. *A. japanocarinatus* species-group.

Holotype. ♀, **China**, Hainan, Jianfengling, 09-VIII-2020, Pinchao LIN leg., CWNNU.

Etymology. This species epithet is named in honor of Mr. Pinchao LIN who collected the type specimens.

Diagnosis. The *A. lini* **sp. nov.** is similar to *A. bocaki* Jendek, 2011, *A. lei* Jendek, 2011 and *A. longicarinus* **sp. nov.** in having a long elytral humeral carinae, but the former can be easily separated from the others by the following characters: (1) elytral surface with black spots composed of black pubescence just behind the middle part; (2) elytral apex subangulate, outside with a very small spine; and (3) angles of prosternal process with sharp tips.

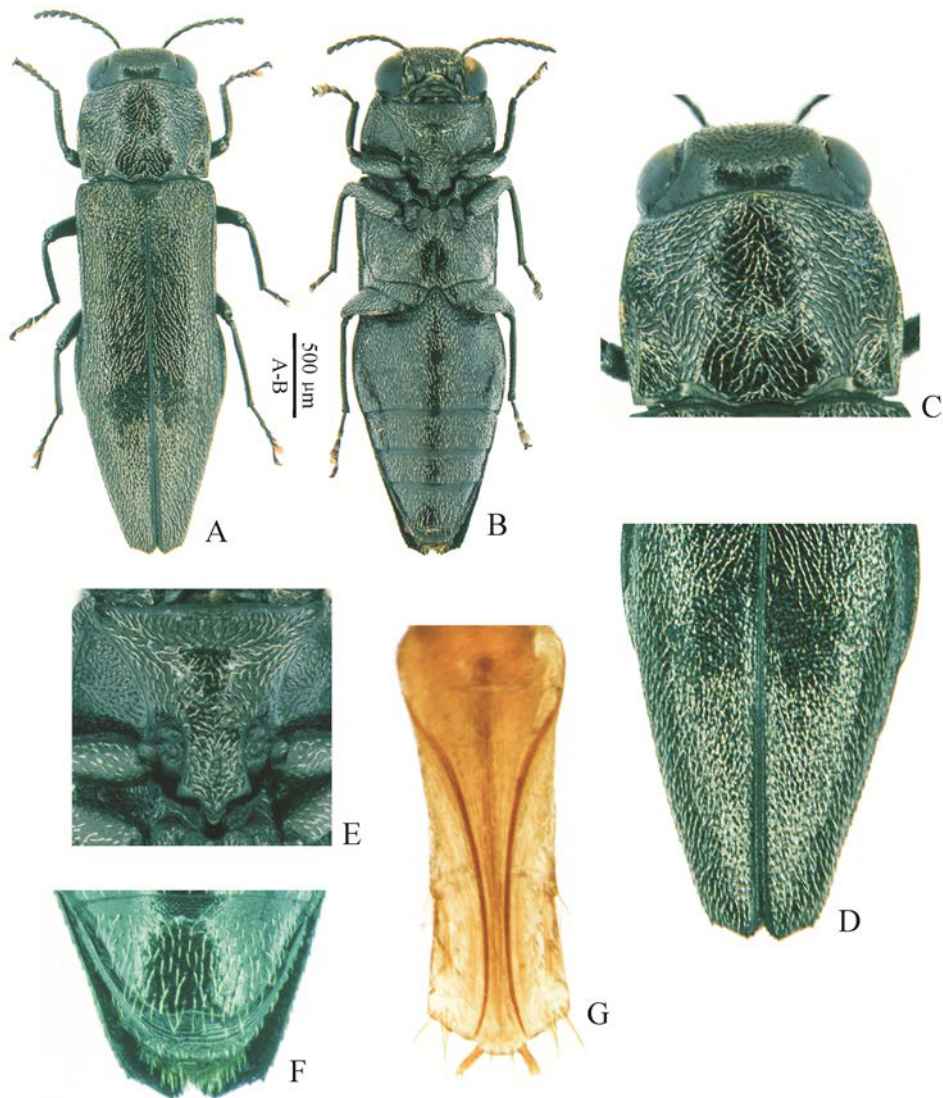


Figure 2. Morphology of *Agrilus lini* sp. nov. A. Habitus, dorsal view; B. Habitus, ventral view; C. Head and pronotum, dorsal view; D. Posterior part of elytra; E. Prosternal process; F. Ventricle IV; G. Ovipositor.

3. *Agrilus adeiphinus* Kerremans, 1895 (Figs 3E, 3F, 3K)

Agrilus adeiphinus Kerremans, 1895: 222.

Agrilus nonfriedi Obenberger, 1914: 44.

Agrilus nonfriedanus Obenberger, 1923: 64.

Agrilus nigrocoerulans Obenberger, 1924: 39.

Agrilus panhensis Baudon, 1968: 117–118.

Agrilus egorovi Alexeev, 1989: 480.

Specimens examined. 2♂8♀, **China**, Liaoning, Kuandian, Jiapigou, 01-VII-2020, Chenghong SUN leg., CWNU; 4♂, **China**, Shaanxi, Zhashui, Zhonghecun, Caixia YUAN leg.,

HBUM.

Distribution. China: Liaoning (new provincial record), Hebei, Shandong, Shanxi, Shaanxi, Anhui, Hubei, Guangdong, Sichuan, Yunnan, Xizang; Russia; North Korea; Japan; Laos.

4. ***Agrilus arsenevi* Jendek, 2009**, new record to China (Figs 3A, 3H)

Agrilus arsenevi Jendek, 2009: 45, 55, 56.

Specimens examined. 2♂1♀, **China**, Ningxia, Jingyuan, Erlonghe, 23-VI-2008, Hongfan RAN leg., HBUM.

Distribution. China: Ningxia; Russia.

5. ***Agrilus auropictus* Kerremans, 1912** (Figs 3B, 3I)

Agrilus auropictus Kerremans, 1912: 208.

Agrilus kanohi Kurosawa, 1954: 90.

Agrilus chopardi Descarpentries & Villiers, 1963: 52–53.

Agrilus ryukyuensis Tôyama, 1985b: 47.

Specimens examined. 2♂2♀, **China**, Guangxi, Jinxiu, Dayaoshan, 10-VI-2020, Chunfu FENG leg., CWNU.

Distribution. China: Fujian, Taiwan, Guangxi (new provincial record); Japan; India; Vietnam.

6. ***Agrilus bacchus* Kerremans, 1913** (Fig. 3C)

Agrilus bacchus Kerremans, 1913: 114.

Agrilus makiharai Tôyama, 1987: 313.

Specimen examined. 1♀, **China**, Hainan, Changjiang, Bawangling, alt. 750 m, Yibin BA Leg., HBUM.

Distribution. China: Hainan (new provincial record), Taiwan.

7. ***Agrilus cupes* Lewis, 1893**

Agrilus cupes Lewis, 1893: 336.

Specimen examined. 1 ex (abdomen lost), **China**, Hubei, Fang County, Qiaoshangxiang, Xiping, alt. 1070 m, 20-VI-2008, Guanglin XIE leg., YTU.

Distribution. China: Inner Mongolia, Shanxi, Shaanxi, Hubei (new provincial record); Japan.

8. ***Agrilus cyaneoniger* Saunders, 1873** (Figs 3D, 3J)

Agrilus cyaneoniger Saunders, 1873: 515.

Agrilus melanopterus Solsky, 1876: 277, 279.

Agrilus cyaneoniger Thomson, 1879: 71.

Agrilus impressifrons Kiesenwetter, 1879: Kraatz & Kiesenwetter 1879: 254–255.

Agrilus jamesi Jakobson, 1913: 798.

Agrilus marquardti Obenberger, 1914: 41–42.

Agrilus ataman Obenberger, 1924: 35, 38.

Agrilus mikado Obenberger, 1924: 35, 36, 38.

Specimens examined. 11♂, **China**, Heilongjiang, Mudanjiang, Suiyang, VI-2020, Unknown leg., CWNU; 1♂, Guangxi, Tian'e, Bamian Gou, 26-VII-2020, Zhonghua WEI leg., CWNU; 1♀, **China**, Guangxi, Leye, VII-2019, Mingbiao LI leg., CWNU; 1♀, **China**,

Guangxi, Leye, 20-IV-2021, Mingbiao LI leg., CWNU (in alcohol).

Distribution. China: Heilongjiang (new provincial record), Inner Mongolia, Hebei, Shanxi, Henan, Shaanxi, Zhejiang, Hubei, Jiangxi, Guangxi, Sichuan, Guizhou, Hainan, Yunnan; Russia; Japan; India; Vietnam.

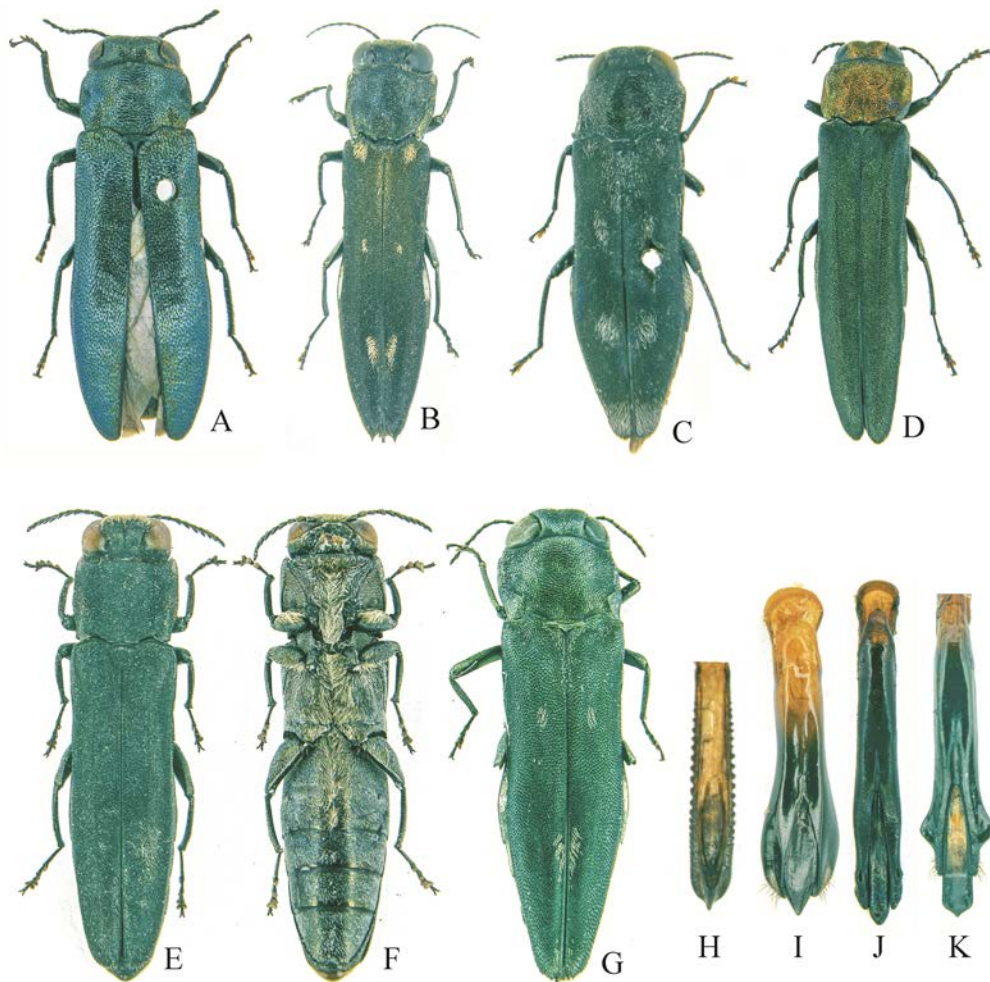


Figure 3. Habitus and aedeagus of *Agrilus* species. A, H. *A. arsenevi* Jendek, 2009 (H. median lobe); B, I. *A. auropictus* Kerremans, 1912; C. *A. bacchus* Kerremans, 1913; D, J. *A. cyaneoniger* Saunders, 1873; E, F, K. *A. adeiphinus* Kerremans, 1985; G. *A. vigil* Jendek, 2011.

9. *Agrilus odetteae* Baudon, 1968

Agrilus odetteae Baudon, 1968: 90, 96–97.

Specimen examined. 1♀, **China**, Sichuan, Hejiang, Zihuai, 26-VIII-2013, alt. 744 m, Yimin YANG leg., CWNU.

Distribution. China: Jiangxi, Hunan, Fujian, Taiwan, Sichuan (new provincial record); India; Laos; Vietnam.

10. *Agrilus vigil* Jendek, 2011 (Fig. 3G)*Agrilus vigil* Jendek, 2011: 216.

Specimen examined. 1 ♀, **China**, Hainan, Wuzhishan, 13-V-2014, Lanbin XIANG leg., CWNU.

Distribution. China: Fujian, Hainan (new provincial record).

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